CLAIMS:

1.         A method of dynamically routing of data through a processing network, comprising at least three nodes for receiving, processing, and transmitting of data, the method comprising the steps of:

- defining a linear route through a number of said nodes, a first node being a source of the
5     route;
- reserving connections for the route that originates at the source node by storing route reservation information associating the defined nodes and/or reserved connections of the route with a time of reservation;
- transmitting a start marker for the route at the source node before any data for the route is
10     sent from the source node;
- establishing a connection between the source node and the next node on the route and removing the reservation information for the two nodes and if
  a) the source node is about to send the start marker to the next node,
  b) the next node is not already connected to any upstream node, and
15     c) the reservation information of the next node indicates it should connect to the source node;
- disconnecting a connection between the source node and the next node if
  a) the next node has received an end of route marker from the source node, and
  b) the next node is connected to the source node;
20  - forwarding the end marker, start marker and data downstream over the connection;
- transmitting data for each node to the next node connected on the route; and
- creating and transmitting an end marker at a source node when subsequent data has to travel via another route if no such end marker is already inserted.

25  2.         A method according to claim 1, characterized in that the step of reserving is done as one atomic action for the whole route.

3.         A method according to claim 1, characterized in that the reservation information is stored in the nodes on the route in an FIFO queue of a first input connection

point (ICP) and in an FIFO queue of a second output connection point (OCP) where a number of node identifiers may be stored in each queue; each identifier representing a neighbouring node to which the node storing the reservation information should be connected to according to the reservation information in the queue.

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4.          A method according to claim 1, characterized in that said start marker precedes a stream of data and an end marker terminates a stream of data, where this ordering is maintained at all times.

10   5.          A method according to claim 1, characterized in that start and end markers are only inserted in a data stream if properties of the stream change.

6.          A method according to claim 1, characterized in that data in a stream may be buffered within a node.

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7.          A method according to claim 1, characterized in that a route describes only a segment of the total list of nodes visited by a data stream.

8.          A method according to claim 1, characterized in that the next node is
20   designated as the first node and the node succeeding this node according to the route is designated as the next node and the steps of establishing, disconnecting, forwarding, transmitting and designating the first node and the next node are repeated until the end marker of the route has reached its destination node.

25   9.          A system for dynamically routing of data through a processing network, comprising at least three nodes means for receiving, processing, and transmitting of data, the system comprising:
     —   means for defining a linear route through a number of said node means, a first node being a source of the route;
30   —   means for reserving connections for the route that originates at the source node by storing route reservation information associating the defined nodes and/or reserved connections of the route with a time of reservation;
     —   means for transmitting a start marker for the route at the source node before any data for the route is sent from the node;

&mdash;   means for establishing a connection between the first node and the next node on the route and removing the reservation information for the two nodes and if

    a)   the first node is about to send the start marker to the next node,

    b)   the next node is not already connected to any upstream node, and

    c)   the reservation information of the next node indicates it should connect to the first node;

&mdash;   means for disconnecting a connection between the first node and the next node if

    a)   the next node has received an end of route marker from the first node, and

    b)   the next node is connected to the first node;

&mdash;   means for forwarding the end marker, start marker and data downstream over the connection;

&mdash;   means for transmitting data for each node to the next node connected on the route; and

&mdash;   means for creating and transmitting an end marker at a source node when subsequent data has to travel via another route.

10.       A system according to claim 9, characterized in, that the step of reserving is done as one atomic action.

11.       A system according to claim 9, characterized in that the reservation information is stored in the nodes on the route in an FIFO queue of a first input connection point (ICP) and in an FIFO queue of a second output connection point (OCP) where a number of node identifiers may be stored in each queue; each identifier representing a neighbouring node to which the node storing the reservation information should be connected to according to the reservation information in the queue.

12.       A system according to claim 9, characterized in that said start marker precedes a stream of data and an end marker terminates a stream of data, where this ordering is maintained at all times.

13.       A system according to claim 9, characterized in, that start and end markers are only inserted in a data stream if properties of the stream change.

14.       A system according to claim 9, characterized in, that data in a stream may be buffered within a node.

15.        A system according to claim 9, characterized in, that a route describes only a segment of the total list of nodes visited by a data stream.

5    16.        A computer readable medium containing a program for making a processor carry out a method of dynamically routing of data through a processing network according to any of the claims 1 to 8.